

## 1 Introduction

The VDES1000 Engineering Control Application, the GUI, introduced a new ping test from version 1.12 on. To support the new ping test, firmware 5.17 or later is recommended. This new ping test allows multiple link IDs to be configured and individually scheduled for comprehensive evaluation and field testing.

## 2 History

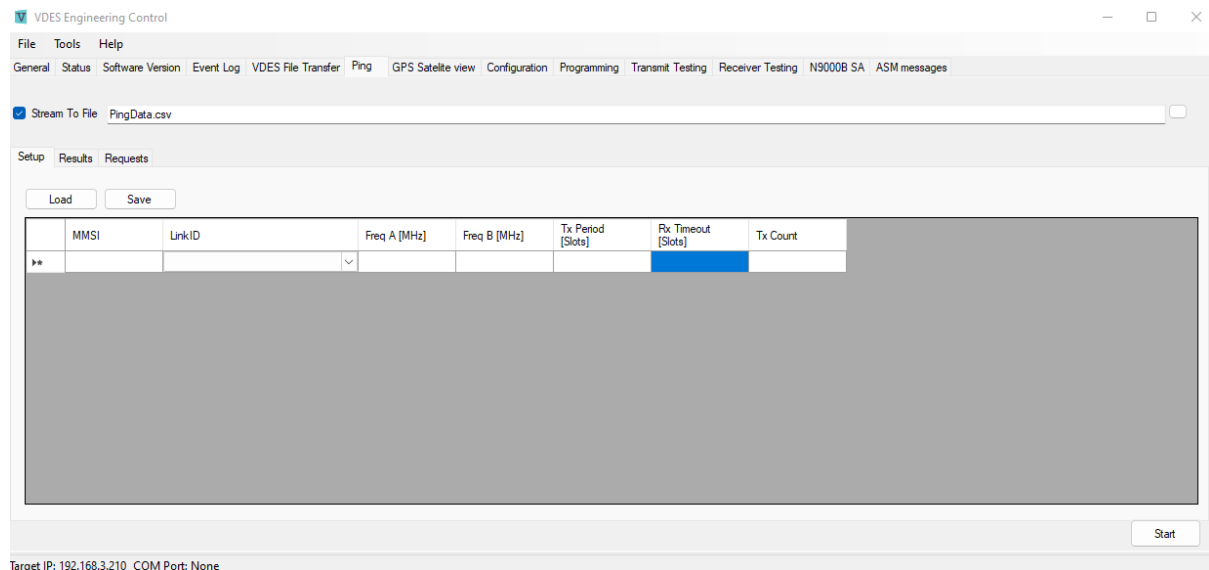
Version	Changes	Date
1	First release	27 June 2023

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### 3 Ping Test Configuration and Monitoring

A screen grab of the **Ping** tab in the VDES Engineering Control application is shown in Figure 1. This tab contains fields and sub-tabs for configuring a test and monitoring an ongoing test.

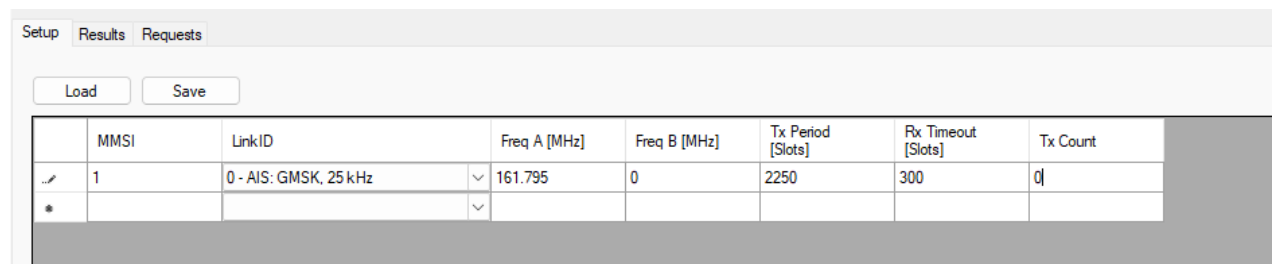


**Figure 1: Ping tab**

Two VDES1000 units are required to do a ping test. Before starting, ensure that the Receiver Testing tabs on both units are correctly configured and enabled for the Link IDs used. The VDES Engineering Control application may optionally be used on the receiving unit to monitor the status of an ongoing test.

#### 3.1 Setup

On the transmitting unit, use the **Setup** tab to configure a new test. A screen grab of the **Setup** tab is shown in Figure 2.



**Figure 2: Setup tab**

Multiple entries can be added by continuing to configure the test parameters. Up to 20 tests can be configured at a time. The test ID is allocated starting at 0 and incremented sequentially as more entries are added.

The following parameters can be configured:

- **MMSI:** The MMSI of the receiving unit to ping.
- **LinkID:** LinkID used for the test. Note that SAT LinkIDs cannot ping between VDES1000 units because the uplink and downlink are different formats.
- **Freq A, Freq B:** The center frequency of the channel where the ping request/response is sent. If Freq B is non-zero, transmissions will alternate between Freq A and Freq B.
- **Tx Period:** Number of timeslots between sending next ping request.

- **Rx Timeout:** Number of timeslots to wait for a response. If the timeout occurs the result will report a timeout.  
Setting this field to 0 configures the responding unit to not send a response. The responding unit will still report a ping request.
- **Tx Count:** The number of ping requests to send before stopping the test.  
Setting this field to 0 will configure this test to continue until the test is manually stopped.

No configuration is required on the receiving unit.

The configuration can be saved to file and later loaded from file using the **Load** and **Save** buttons. The configuration can also be loaded from a previous result file.

To stream the results of the ping test to file, check the **Stream To File** option and provide a file name. The file will be overwritten if another ping test is started with the **Stream To File** option still checked.

### 3.2 Starting a ping test

A ping test must have been configured on the **Setup** tab of the transmitting unit.

If a receiving unit is being used to monitor the ping test and there is data from a previous ping test in the receiving unit's **Requests** tab, then press the Start button on the Receiving unit until the data has cleared and then press stop. This will reset the counters ready for the new ping test.

In the Transmitting unit, click the **Start** button to commence a test. Any data from a previous ping test will be cleared on the transmitting unit and the counters reset. The **Start** button will change to a **Stop** button and clicking it again will stop the test. The Ping test can be stopped at any time but cannot be resumed. The fields in the **Results** tab will start to update. This may take several seconds depending on the Tx Period settings.

If the **Request** tab is being monitored on the receiving unit, then this will also begin to update.

### 3.3 The Results tab

Use the **Results** tab on the transmitting unit to display the results of a ping test. The results will be updated during an on-going test and will stop updating when the Stop button is pressed. A screen grab of the **Results** tab is shown in Figure 3.

TestID	Number of Requests Sent	Number of Responses Received	Number of Responses Reported	Request RSSI	Response RSSI	Current Range	Packet ...	LinkID	Target...	Centre Freq
0	1	0	0	0	0	0	1 (0.0%)	0	1	(161795000 : 0)

**Figure 3: Results tab**

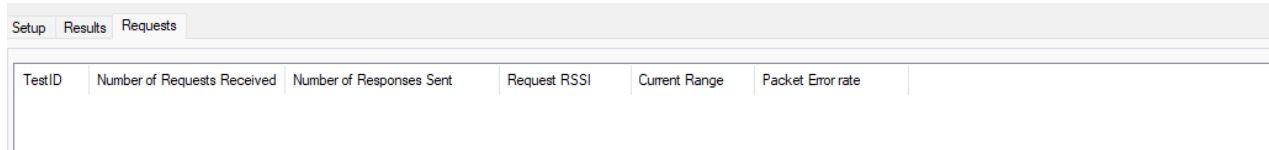
The following fields are shown for each ping request sent:

- **TestID:** TestID assigned to a specific test.
- **Number of Request Sent:** The number of ping request sent.
- **Number of Responses Received:** The number of successful responses received.
- **Number of Responses Reported:** The number of responses (replies) sent by the receiving unit, as reported by the receiving unit.
- **Request RSSI:** Last reported RSSI of the ping request message as measured by the receiving unit.
- **Response RSSI:** Last measured RSSI of the ping response message as measured by the sending unit.
- **Current Range:** Calculated range [in m] between units (Based on GNSS location).
- **Packet Error rate:** Calculated Packet error rate (Requests/Responses).
- **LinkID:** LinkID of this test.

- Target MMSI: MSSI of receiving unit.
- Centre Freq: Centre frequency of the channel where this test is running.

### 3.4 Requests tab

The **Requests** tab can be used on the receiving unit to monitor its status while it is being pinged. A screen grab of the **Requests** tab is shown in Figure 4.



TestID	Number of Requests Received	Number of Responses Sent	Request RSSI	Current Range	Packet Error rate
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**Figure 4: Request tab**

The following fields are shown for each ping request received:

- TestID: TestID assigned to a specific test. This is allocated by the sending unit.
- Number of Request Received: Number of ping request received as reported by the sending unit.
- Number of Responses Sent: Number of ping responses sent. This is also an indication of number of requests successfully received.
- Request RSSI: Last reported RSSI of the ping request message as measured by the receiving unit.
- Current Range: Calculated range [in m] between units (Based on GNSS location).
- Packet Error rate : Calculated Packet error rate (Requests/Responses).

### 3.5 Stopping a Ping test

Click the **Stop** button on the transmitting unit to stop or cancel a test at any time. The transmitting unit's Results tab will stop updating and show the status of the Ping test. The test results will be available in the CSV file if this has been enabled – see 3.13.1 Setup.

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